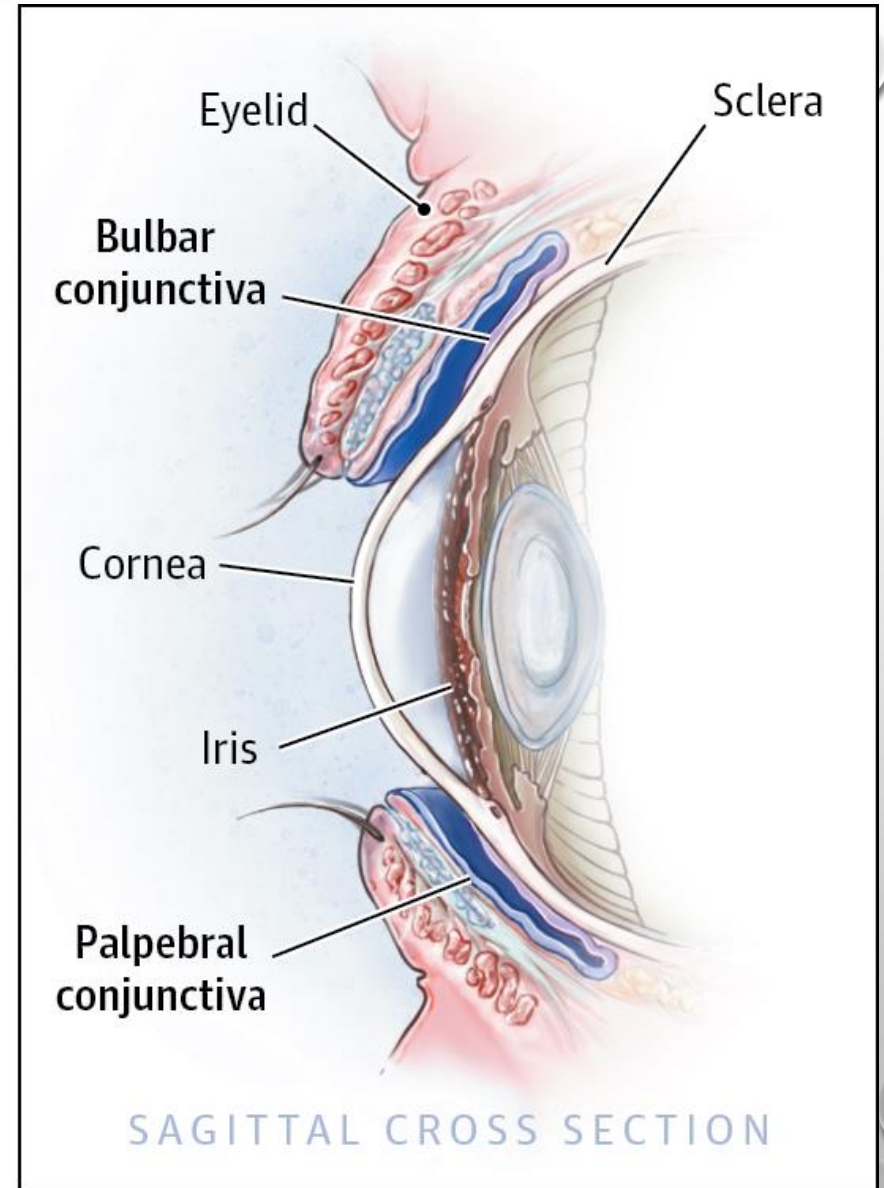
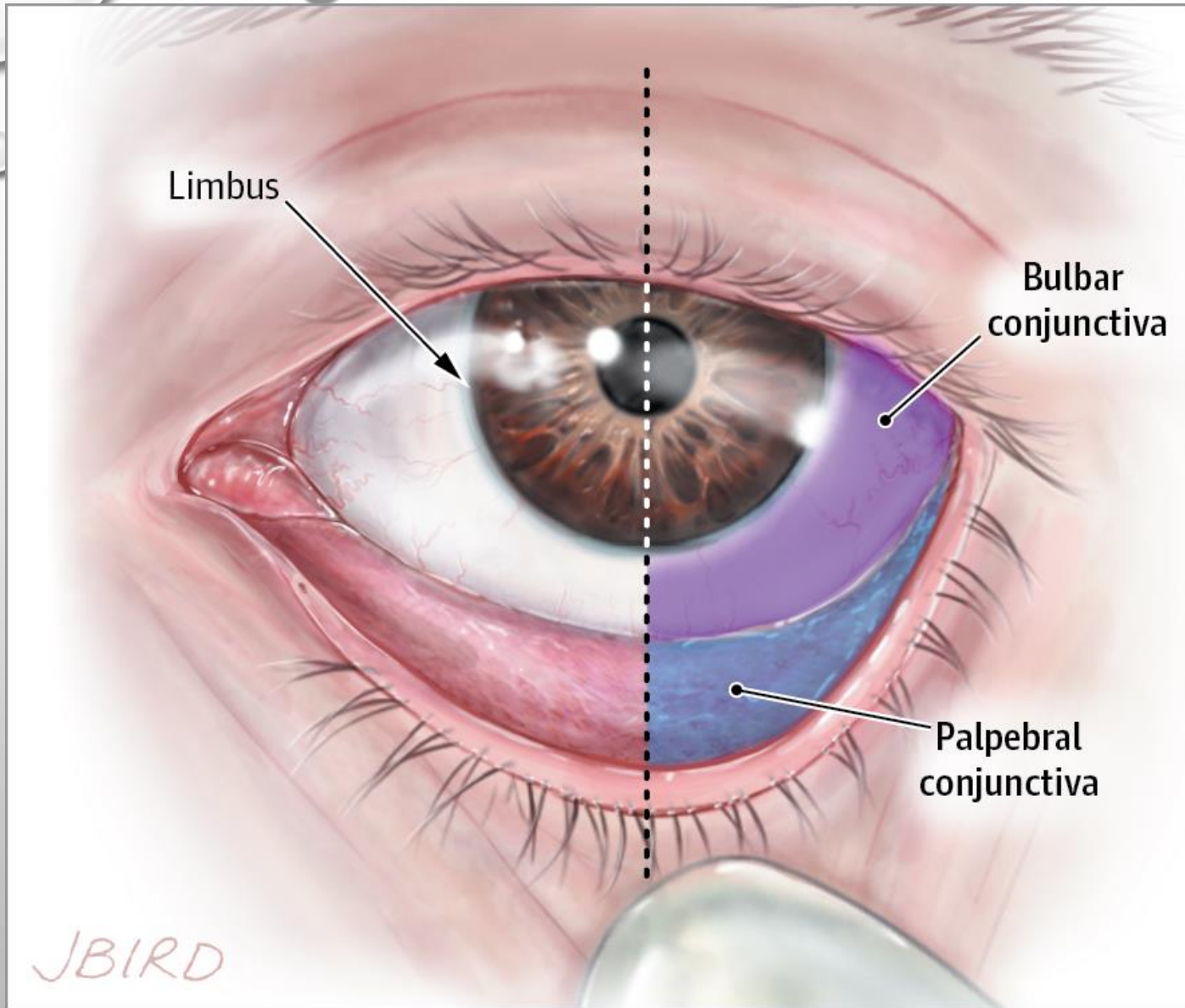


The background is a light gray gradient. It features several realistic water droplets of various sizes scattered across the surface. In the center, there is a faint, circular diagram of a human eye, showing the iris, pupil, and surrounding structures.

RED EYE

KAROLÍNA SKORKOVSKÁ



Forms of conjunctival injection

Conjunctival

Conjunctival disorders;
conjunctivitis

Mixed

Corneal disorders
with intraocular
irritation;
corneal ulcerations

Pericorneal

Conjunctival
disorders near the
cornea:
—Rosacea
—Corneal lesions near
the limbus:
—Foreign body
—Herpetic keratitis

Ciliary

Disorders of deeper
tissues and intraocular
structures:
—Episcleritis
—Scleritis
—Disciform keratitis
—Iritis
—Cyclitis

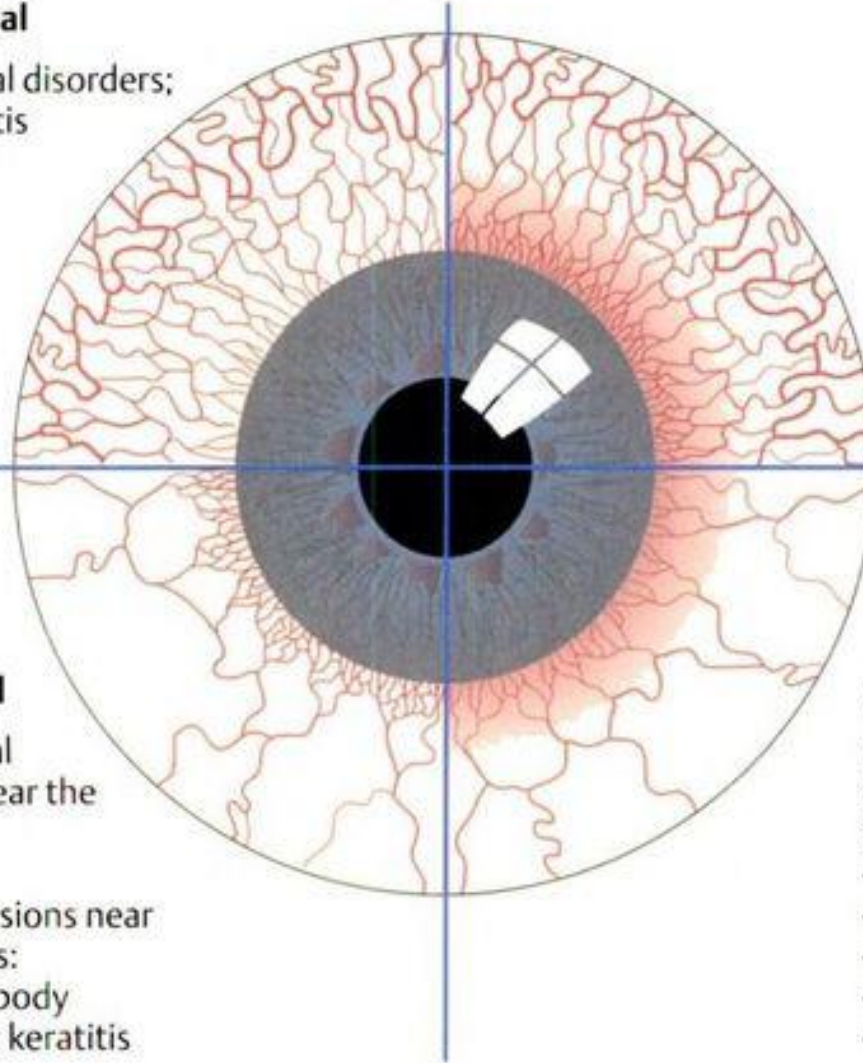


Fig. 4.6

Table 1. Diagnostic Characteristics of Selected Disorders That Cause A Red Eye.

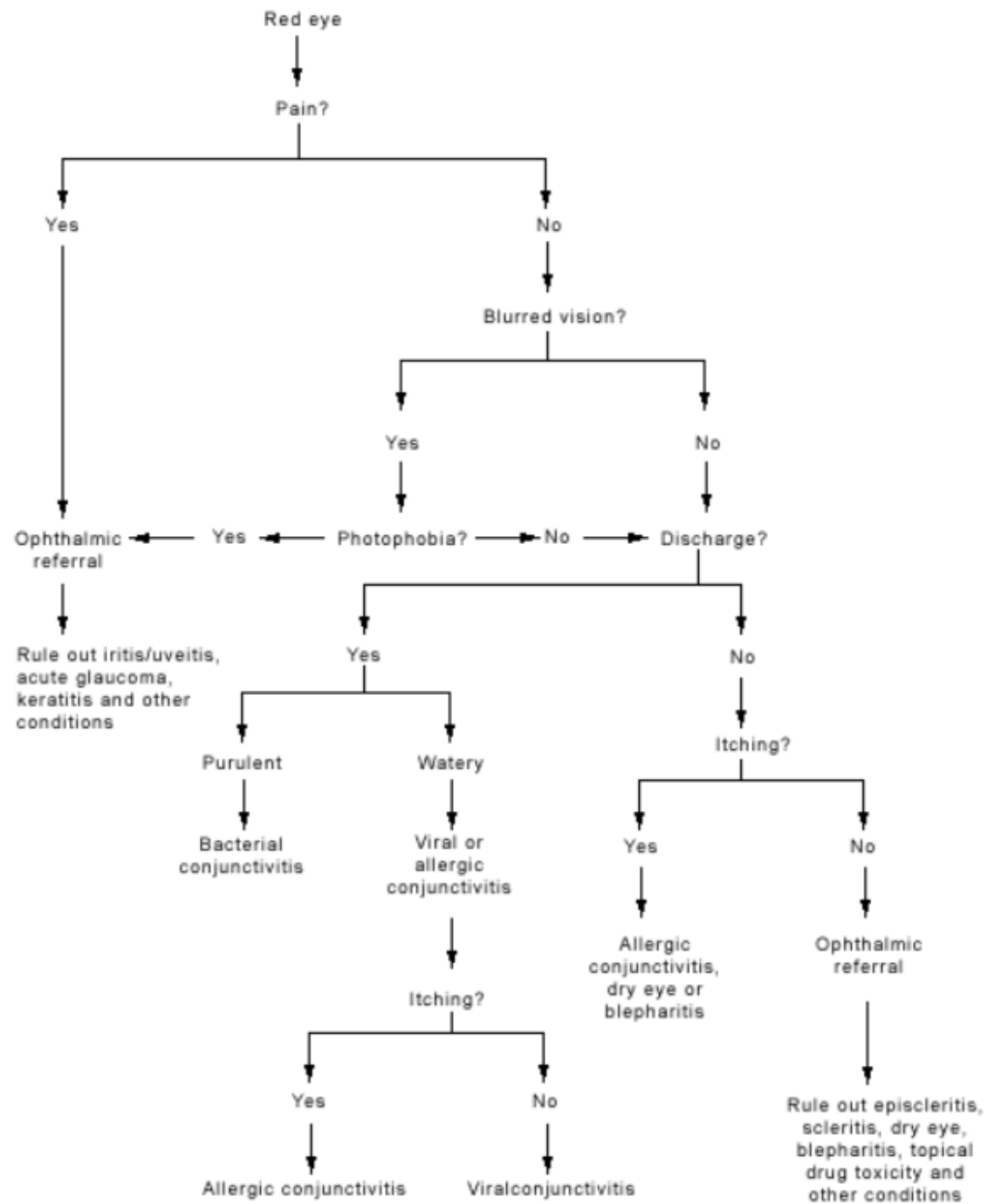
Characteristic or Site	Conjunctivitis	Episcleritis	Scleritis	Angle-Closure Glaucoma	Acute Anterior Uveitis	Superficial Keratitis
Hyperemia	Diffuse, more prominent toward fornices	Focal	Focal or diffuse	Diffuse; most prominent adjacent to limbus	Diffuse; most prominent adjacent to limbus	Diffuse
Discharge	Yes	No	No	No	Minimal, if present	Yes (if infectious cause)
Pupil	Not affected	Not affected	Constricted if secondary uveitis present; otherwise not affected	Moderately dilated; unreactive to light	Constricted; poor response to light	Constricted if secondary uveitis present; otherwise not affected
Ocular pain	Essentially none	Mild to moderate	Moderate to severe	Moderate to severe (often with headache and vomiting)	Moderate	Moderate to severe
Vision	Generally not affected	Not affected	May be reduced	Severely reduced	Mildly to moderately reduced	Moderately to severely reduced
Cornea	Clear	Clear	Occasional peripheral opacity; otherwise clear	Hazy	May be hazy (not as prominently as in angle-closure glaucoma)	Hazy

Reproduced with permission: Leibowitz HM. The red eye. *N Engl J Med* 2000 Aug 3;343(5):345-351. Table 1. Copyright ©2000 Massachusetts Medical Society. All rights reserved.

Differential diagnosis of red eye with no injury



	Conjunctivitis	Corneal ulcer	Acute iritis	Acute glaucoma
Eye	Usually both eyes	Usually one eye	Usually one eye	Usually one eye
Vision	Normal	Usually decreased	Often decreased	Marked decrease
Eye pain	Normal or gritty	Usually very painful	Moderate pain, light sensitive	Severe pain (headache and nausea)
Discharge	Sticky	Watery	Watery	Watery
Conjunctiva	Generalised (variable) redness	Redness most marked around the cornea	Redness most marked around the cornea	Generalised redness
Cornea	Normal	Grey, white spot (fluorescein staining)	Usually clear, (keratic precipitates may be visible with magnification)	Hazy (due to fluid in the cornea)
Anterior chamber (AC)	Normal	Occasionally creamy fluid level in the anterior chamber (hypopyon)	Cells will be visible with magnification	Shallow or flat
Pupil size	Normal and round	Normal and round	Small and can be irregular	Mid-dilated and oval
Pupil response to light	Active	Active	Minimal reaction as already small	Minimal or no reaction
Intraocular pressure (IOP)	Normal (but do not attempt to measure IOP). NB Risk of infection	Normal (but do not attempt to measure IOP)	Normal or slightly raised	Raised
Photophobia	Slight	Significant	Significant	None
Useful diagnostic sign / test	Discharge in both eyes with clear cornea, normal pupil and normal vision	White spot or mark on the cornea which stains with fluorescein	Small pupil which becomes irregular as it dilates	Very painful eye with poor vision and dilated pupil. Raised IOP and shallow AC





RED EYE – SUBJECTIVE SYMPTOMS

- PAIN?
 - BLURRED VISION?
 - PHOTOPHOBIA?
 - DISCHARGE?
 - ITCHING?
- 

RED EYE – OBJECTIVE SIGNS

- TYPE OF INJECTION?
- TARSAL CONJUNCTIVA AFFECTED?
- CORNEA AFFECTED?
- FOREIGN BODY?
- INTRAOCULAR PRESSURE?
- INTRAOCULAR INFLAMMATION?

Characteristic or site	Hyperaemia	Discharge	Pupil	Vision	Pain	Cornea	Prevalence
<i>Conjunctivitis</i>	Diffuse	Yes	Unaffected	Generally unaffected	Essentially none	Clear	Very common
<i>Subconjunctival Haemorrhage</i>	Diffuse	No	Unaffected	Unaffected	Essentially none	Clear	Common
<i>Keratitis</i>	Diffuse	No	Constricted if secondary uveitis present; otherwise not affected	Moderately to severely reduced	Moderate to severe	Hazy	Uncommon
<i>Uveitis</i>	Diffuse	Minimal	Constricted-poor light response	Mildly to moderately reduced	Moderate	May be hazy	Uncommon
<i>Glaucoma</i>	Diffuse	No	Moderately dilated; unreactive	Severely reduced	Moderate-severe (often including headache/vomiting)	Hazy	Uncommon
<i>Scleritis</i>	Focal or diffuse	No	Constricted if secondary uveitis present; otherwise unaffected	May be reduced	Moderate-severe	Occasional peripheral opacity	Uncommon

CONJUNCTIVITIS

- DIFFUSE, SUPERFICIAL INJECTION
- TARSAL CONJUNCTIVA USUALLY ALSO AFFECTED
- CORNEAL OEDEMA
- WITH DISCHARGE
- ESSENTIALLY NO PAIN
- VISION GENERALLY UNAFFECTED
- CORNEA CLEAR
- VERY COMMON

CONJUNCTIVITIS

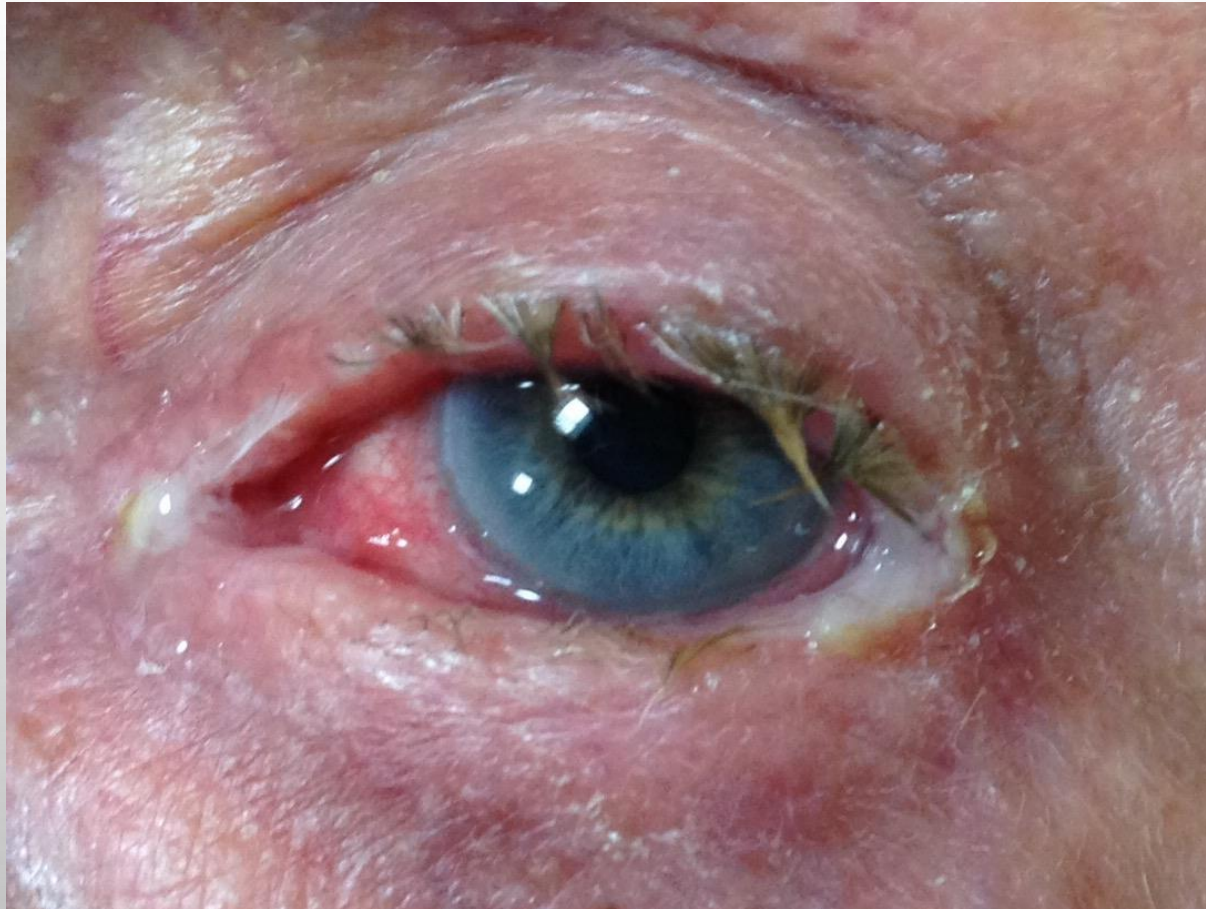
- VIRAL, BACTERIAL, CHLAMYDIA, PARASITES...
- OFTEN EPIDEMIC OCCURANCE
- LOCAL ANTIBIOTICS AND CORTICOSTEROIDS
- HYGIENIC MEASURES
- IF NOT RESPONDING TO THERAPY
 - SWAB FROM THE CONJUNCTIVA AND TARGETED ANTIBIOTIC TREATMENT

VIRAL CONJUNCTIVITIS

- GROUP OF ADENOVIRUSES
- HIGHLY INFECTIOUS!!!
- EPIDEMIC KERATOCONJUNCTIVITIS
- IF CORNEA IS AFFECTED, SOMETIMES LONG-TERM CORTICOSTEROIDS ARE NECESSARY
- PHARYNGOCONJUNCTIVAL FEVER IN CHILDREN (IN ASSOCIATION WITH UPPER RESPIRATORY TRACT INFECTION)



BACTERIAL CONJUNCTIVITIS



SUBACUTE CONJUNCTIVITIS

- **ADULT INCLUSION CONJUNCTIVITIS** RESULTS FROM *C TRACHOMATIS* SEROTYPES D-K
- CHRONIC FOLLICULAR CONJUNCTIVITIS THAT CAN OCCUR IN ADULTS OR IN THE NEONATE
- THE ADULT DISEASE IS TRANSMITTED SEXUALLY OR FROM HAND-TO-EYE CONTACT
- GONORRHEA IS THE MOST COMMON CO-INFECTION WITH ADULT INCLUSION CONJUNCTIVITIS

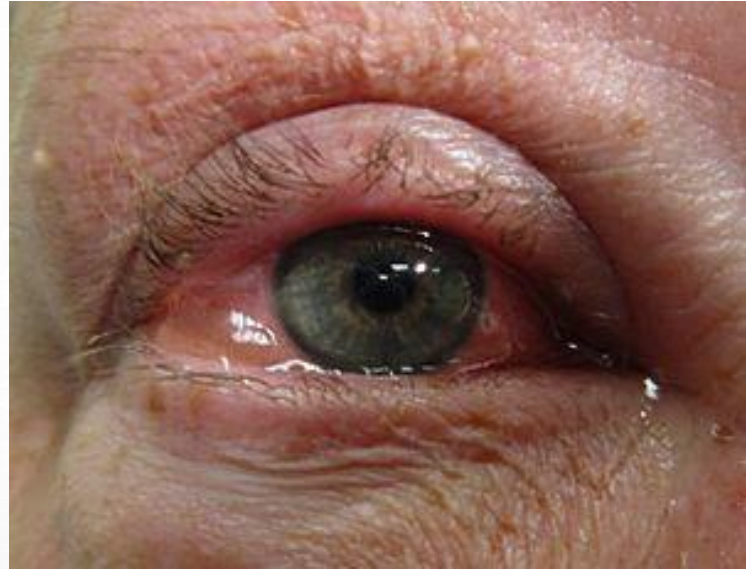


ADULT INCLUSION CONJUNCTIVITIS

- PRESENTS AS A UNILATERAL (OR LESS COMMONLY BILATERAL) RED EYE WITH MUCOPURULENT DISCHARGE, MARKED HYPEREMIA, PAPILLARY HYPERTROPHY, AND A PREDOMINANT FOLLICULAR CONJUNCTIVITIS.
- CONJUNCTIVITIS OFTEN IS CHRONIC AND MAY LAST FOR MANY MONTHS
- ADULT INCLUSION CONJUNCTIVITIS IS A SEXUALLY TRANSMITTED DISEASE.

ALLERGIC CONJUNCTIVITIS

- ITCHING
- CHEMOSIS
- EYELID OEDEMA
- LOCAL AND SYSTEMIC TREATMENT WITH ANITHISTAMINES

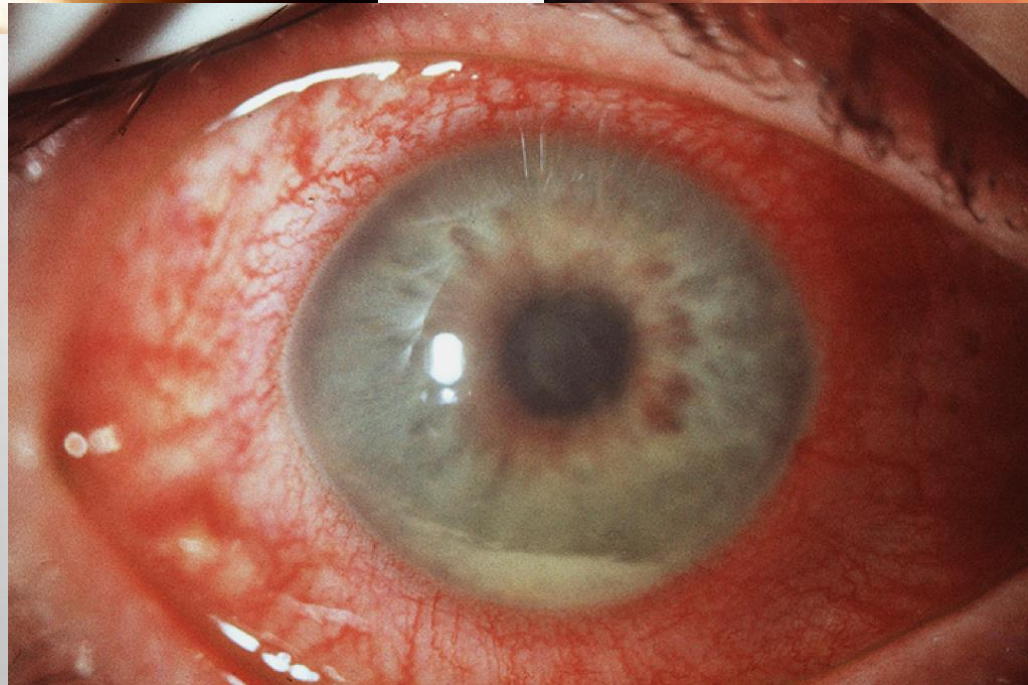
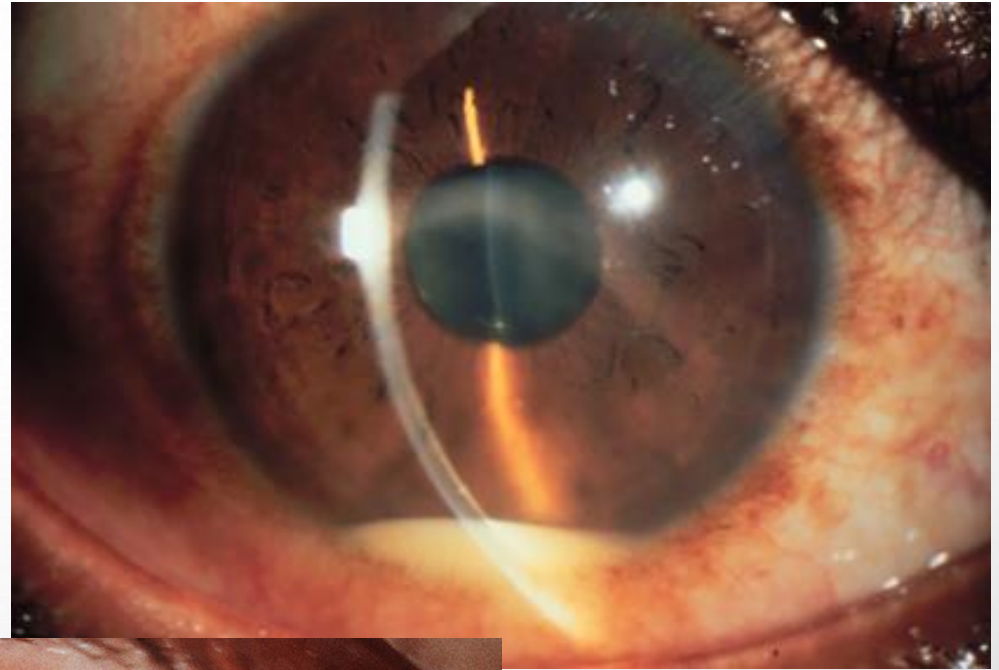
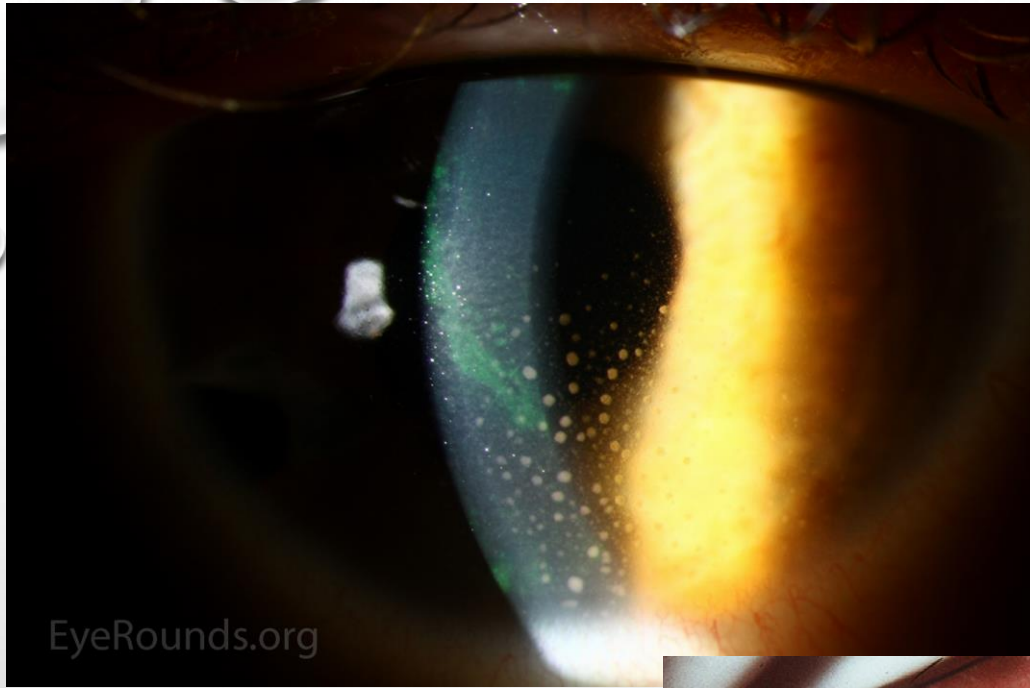


ANTERIOR UVEITIS (IRIDOCYCLITIS)

- RED EYE
- BLURRED VISION
- PHOTOPHOBIA
- PAIN

ANTERIOR UVEITIS (IRIDOCYCLITIS)

- DEEP, CILIARY INJECTION
- KERATIC PRECIPITATES ON THE POSTERIOR SURFACE OF THE CORNEA
- PUPILLOPLEGIA
- POSTERIOR SYNECHIAE
- HYPOPYON
- ELEVATION OF INTRAOCULAR PRESSURE



ANTERIOR UVEITIS - TREATMENT

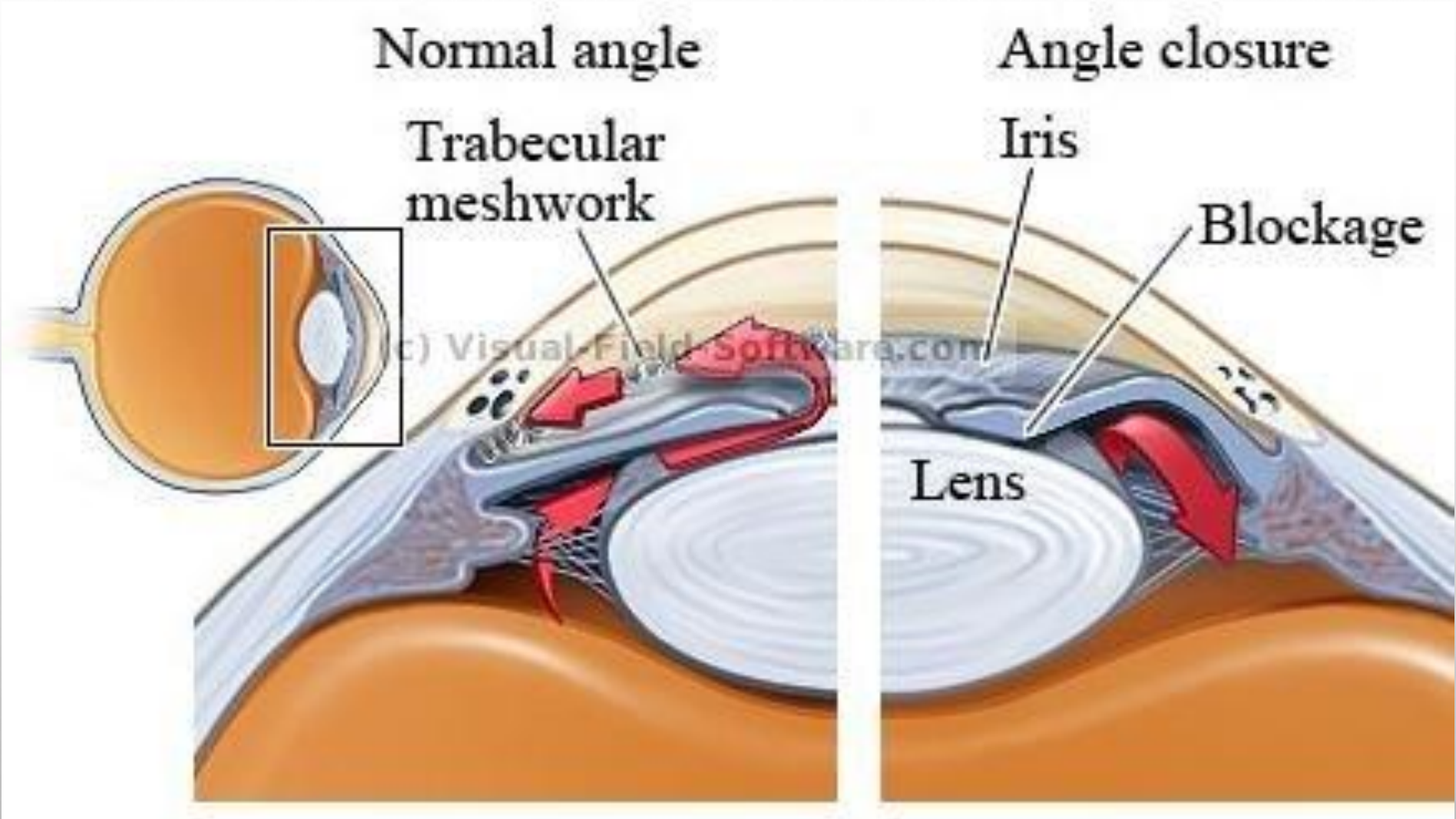
- LOCAL CORTICOSTEROIDS (EYEDROPS, OINTMENT, SUBCONJUNCTIVAL, SYSTEMIC)
 - MYDRIATIC AGENTS
 - NON-STEROID ANTIINFLAMMATORY DRUGS (LOCAL AND SYSTEMIC)
 - GLAUCOMA MEDICATION
-
- DIAGNOSIS OF A SYSTEMIC DISEASE (BECHTEREW DISEASE AND OTHER HLA-B27 ASSOCIATED DISEASES)

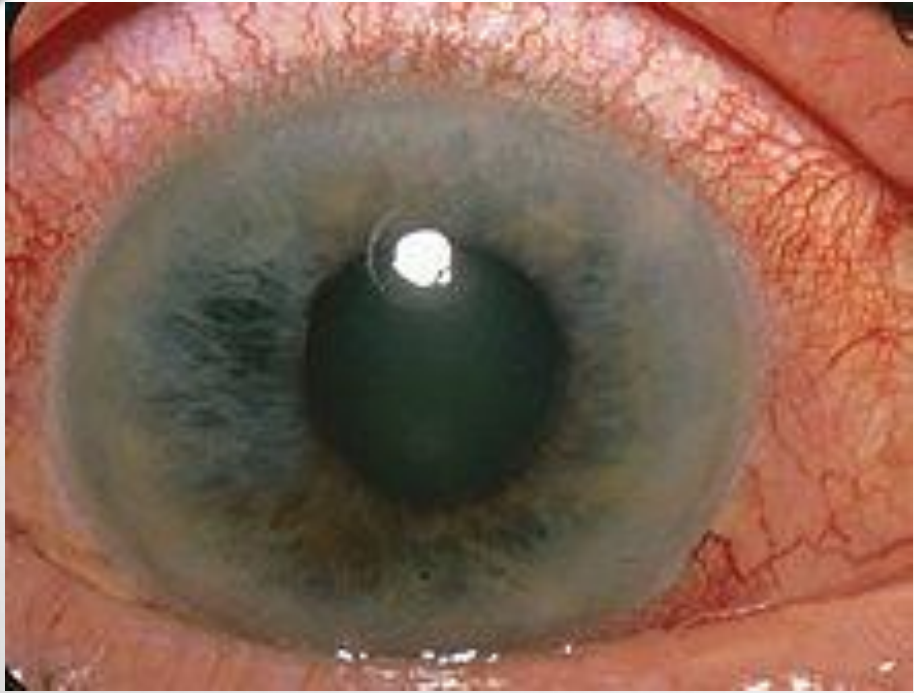
ANGLE CLOSURE GLAUCOMA

- SEVERE PAIN OF THE EYE, THE PERIOCCULAR REGION AND HEMICRANIA
- VISUAL LOSS (MAY ALSO BE SEVERE)
- NAUSEA, VOMITING, ...

ANGLE CLOSURE GLAUCOMA


- CILIARY INJECTION
- CORNEAL OEDEMA AND HAZE
- SHALLOW ANTERIOR CHAMBRE
- PUPILLOPLEGIA, MYDRIASIS
- HIGH INTRAOCULAR PRESSURE
- OFTEN HYPEROPIA

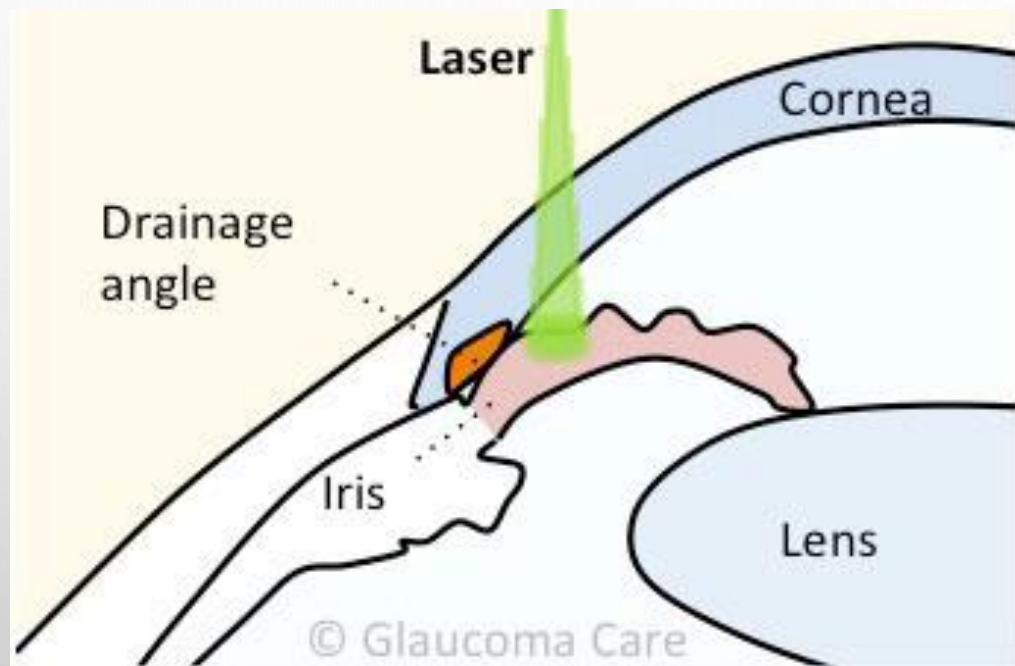




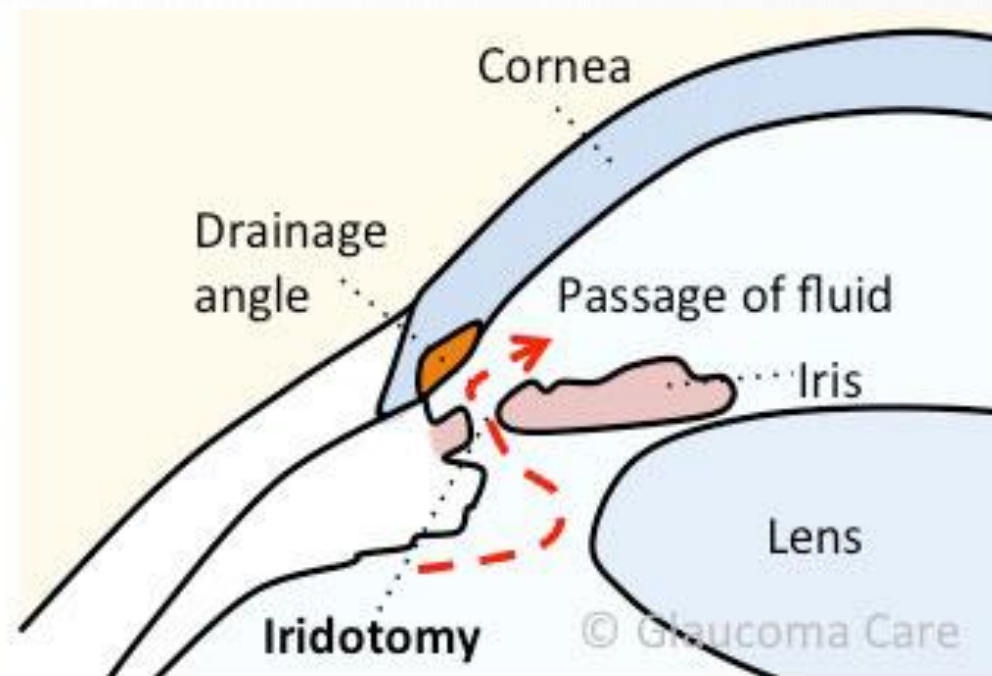


ACUTE ANGLE CLOSURE GLAUCOMA - TREATMENT

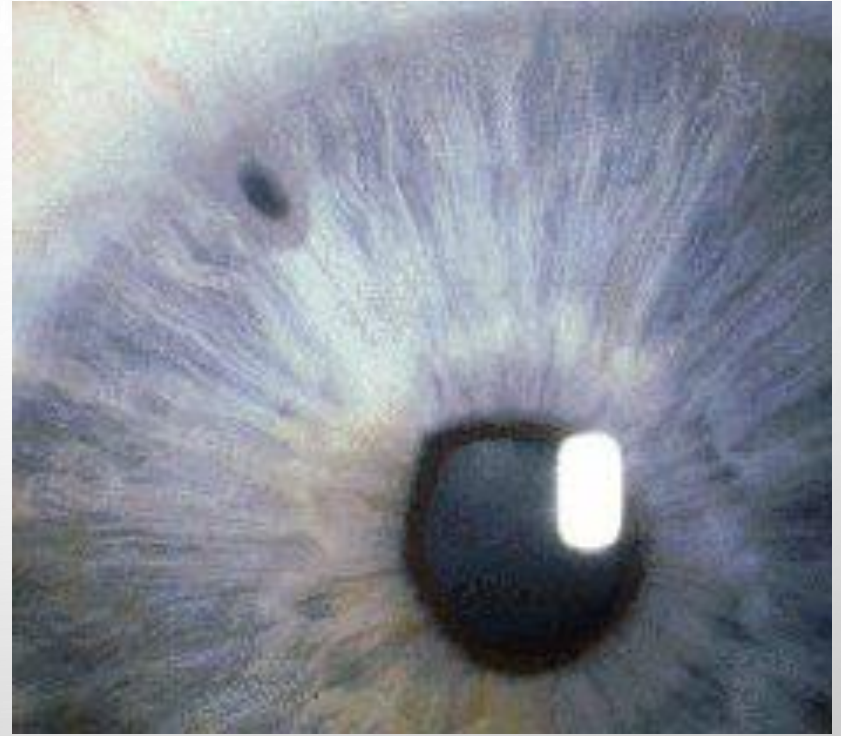
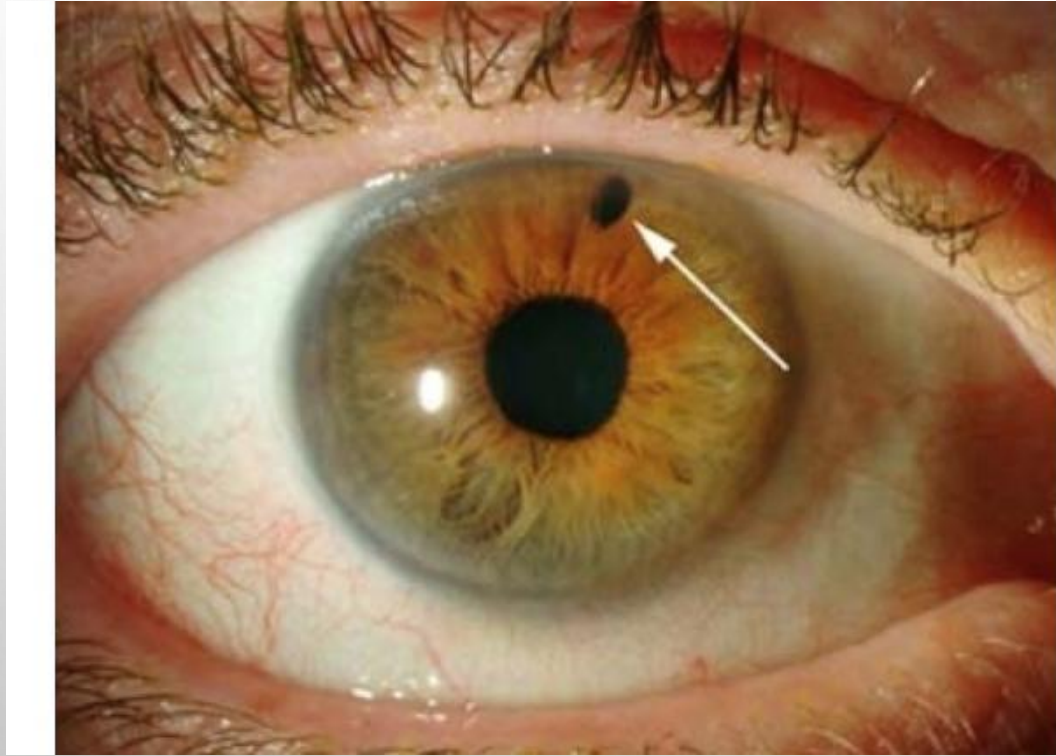
- MIOTIC AGENTS - PILOCARPINE
 - ANTIINFLAMMATORY DRUGS
 - GLAUCOMA – LOCAL AND SYSTEMIC TREATMENT
 - LASER IRIDOTOMY
- 



Laser iridotomy



Angle opened

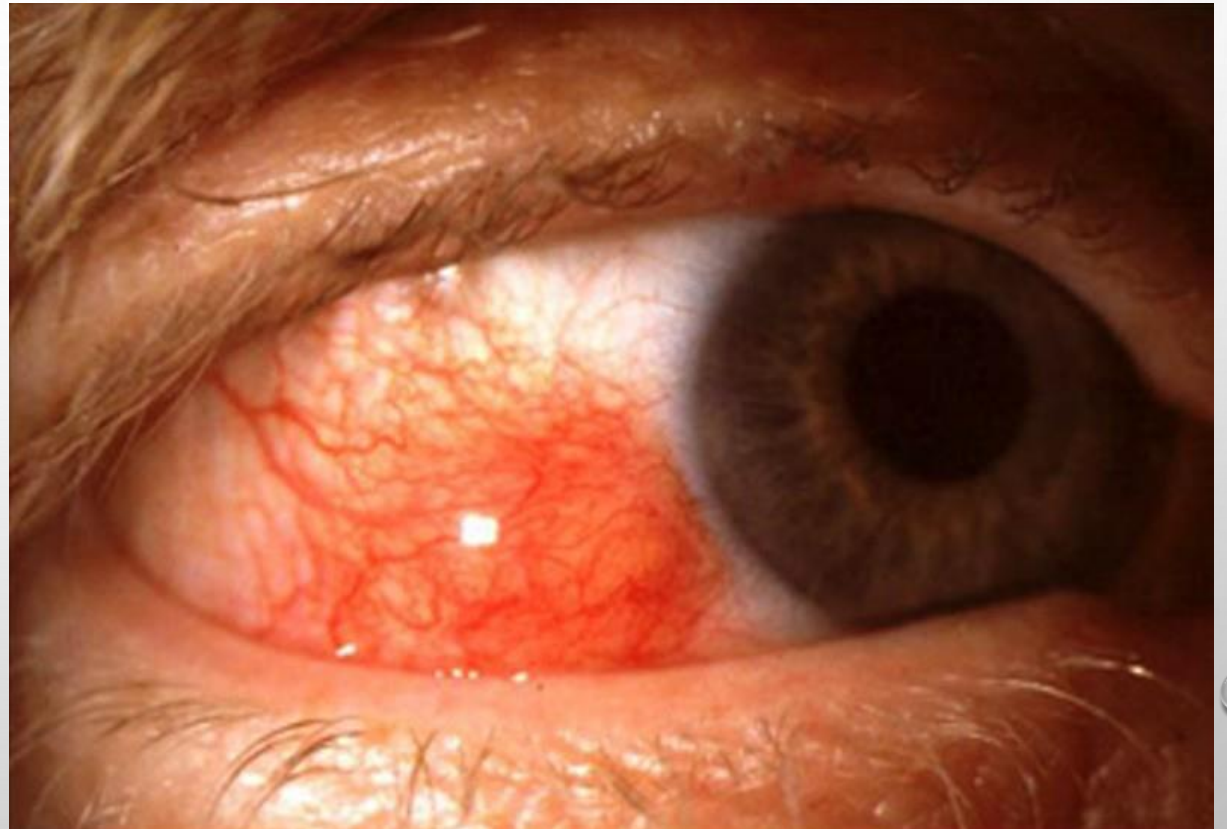



COMPLICATIONS OF ANGLE CLOSURE GLAUCOMA

- PERMANENT VISUAL LOSS
- CHRONIC ANGLE CLOSURE GLAUCOMA
- CATARACT
- POSTERIOR SYNECHIAE


EPISCLERITIS

- RED EYE (SECTORAL HYPEREMIA)
- DISCOMFORT
- NO DECREASE IN VISUAL ACUITY
- NO INTRAOCULAR INFLAMMATION
- NO OTHER SYMPTOMS





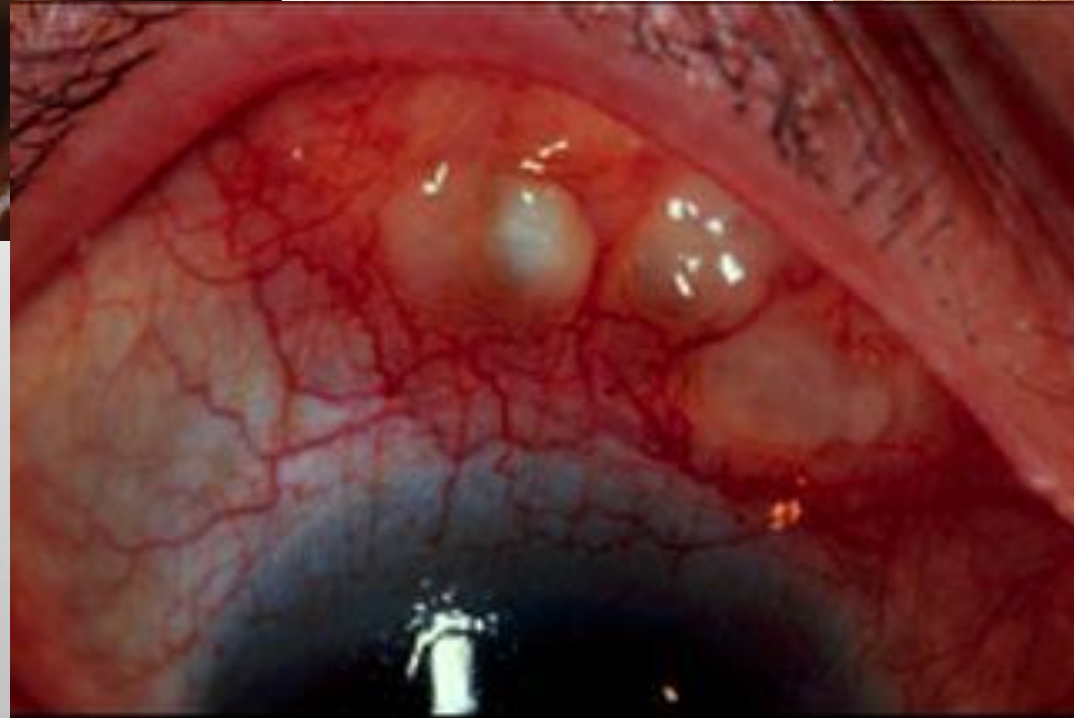
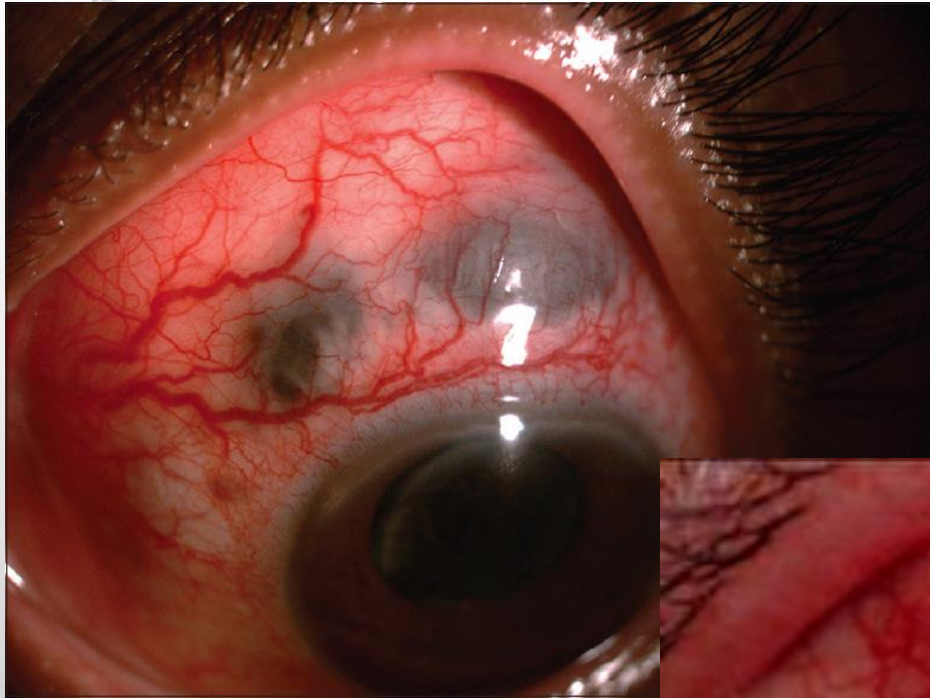
EPISCLERITIS - TREATMENT

- SELF-LIMITING DISEASE
 - RECURRENCE IS POSSIBLE
 - NONSTEROID ANTIINFLAMMATORY DRUGS (NSAIDS)
- 

SCLERITIS

- MORE SERIOUS CONDITION THAN EPISCLERITIS
- SEVERE PAIN
- RED EYE
- IN POSTERIOR SKLERITIS MAY BE DECREASED VISUAL ACUITY
- COMPLEX DIAGNOSTICS NECESSARY (AUTOIMMUNE DISEASES!!!)

SCLERITIS



CLINICAL DIAGNOSIS OF RED EYE

- VISUAL ACUITY
- SLIT LAMP EXAMINATION
- PUPIL LIGHT REACTION
- OPHTHALMOSCOPY IF NECESSARY
- LABORATORY
- MICROBIAL TESTS

Thank you for your attention

